WEST Search History

Hide Items Restore Clear Cancel

DATE: Sunday, January 09, 2005

Hide?	<u>Set</u> Name	Query	<u>Hit</u> <u>Count</u>
	DB=F	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD; PLUR=YES; OP=ADJ	
	.L65	L64 and ((ferromagnetic\$5 or ferrus or ferro-magnetic\$5 or ferrite ot iron) with (ring or loop or annular\$2 or annulus or annulus))	2
	L64	L63 and ((polar\$5) with (main or shap\$4 or buck\$4) with coil)	11
	L63	L62 and (polar\$5)	12
	L62	L61 and ((opposite or different or first or second or alternat\$3 or revers\$3 or clock-wise or clockwise or "clock wise" or "cw" or "ccw" or counter) with (current or direction))	12
	L61	L60 and (buck\$5 with coil)	12
	L60	L59 and ((buck\$5 or compensat\$4 or correct\$3 or shim\$4 or auxiliary or auxiliary) with coil)	12
П	L59	L58 and (ferromagnetic\$5 or ferrus or ferro-magnetic\$5 or ferrite ot iron or ring or loop or annular\$2 or annulus or annulus)	12
	L58	L57 and (stainless or stain-less or steel or aluminum or fiber or reinforced or composite)	12
	L57	L56 and (shell or housing or enclosure or cylinder or cylindrical\$2 or casing)	12
	L56	L55 and ((single or one or solitary) with (support or pillar or pilar or column or yoke or post or pole))	12
\square	L55	L54 and (hub or radi\$4 or center\$4 or central\$3)	12
	L54	L53 and (gussets or gusset)	12
	L53	L52 and (shap\$3 with coil)	211
	L52	L51 and (support or pillar or pilar or column or yoke or post or pole)	272
	L51	L50 and (single or one or solitary)	347
	L50	L49 and (shap\$3 with magnet\$6)	359
	L49	L48 and (open)	516
	L48	L47 and (shap\$3 with (coil or field or flux))	1204
	L47	L7 and ((main or primary) with coil)	3103
	DB=F	PGPB, USPT, EPAB, JPAB, DWPI, TDBD; PLUR=YES; OP=ADJ	•
	L46	L45 and (gusset)	33
	L45	L8 and (shap\$4)	42647
		JSPT; PLUR=YES; OP=ADJ	
	L44	L43 and (laminat\$7)	. 11
	L43	fetzner	219
	DB=U	JSPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=ADJ	

	L42	L41 and (yoke or yok\$4)	0
	L41	L40 not L26	12
	L40	L39 and (post or support or frame or column or pillar or pole or plate or piece or fac\$4)	15
	L39	L38 and (neodymium or "NdFeB")	15
	L38	L37 and (steel)	246
	L37	L36 and (laminat\$6)	577
	L36	L35 and (wedge or wedged or pie or triang\$7)	4134
	L35	L34 and (epoxy or glue or glued or adhesive or insulat\$6 or resin or attatch\$4 or atatch\$4 or fix\$4)	29623
	L34	L8 and (bevel\$4 or taper\$4 or diagonal\$4 or oblique or slant\$4 or tilt\$4 or trapezoid\$4 or slop\$4 or inward\$3 or outward\$3 or downward\$3 or upward\$3 or rotat\$4)	44357
	L33	(5315276 5345208 5347252 5378988)![pn]	8
	DB=0	USPT; PLUR=YES; OP=ADJ	
	L32	5378988.pn.	1
	L31	5347252.pn.	1
	L30	5345208.pn.	1
	.L29	5315276.pn.	1
	DB=0	USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=ADJ	
	L28	L27 and (wedge or wedged)	0
	L27	L26 not L22	5
	L26	L25 and (steel)	7
	L25	L24 and (neodymium or "NdFeB")	16
	L24	L23 and (laminat\$6)	114
	L23	L9 and (bevel\$4 or taper\$4 or diagonal\$4 or oblique or slant\$4 or tilt\$4 or trapezoid\$4 or slop\$4 or inward\$3 or outward\$3 or downward\$3 or upward\$3 or rotat\$4)	955
	L22	L17 and (wedge or wedged)	2
	L21	L20 not L19	1
	L20	L17 and (laminat\$6)	7
	L19	L18 and (laminat\$6)	6
	L18	L17 and (epoxy or glue or glued or adhesive or insulat\$6 or resin or attatch\$4 or atatch\$4 or fix\$4)	20
	L17	L16 and (neodymium or "NdFeB")	22
	L16	L15 and (steel)	302
	L15	L11 and (post or support or frame or column or pillar)	787
	L14	L13 and (neodymium or "NdFeB")	22
\square	L13	L12 and (steel)	299
	L12	L11 and (post or support or frame or column)	784

\Box	L11	L10 and (pole or plate or piece or fac\$4)	899
	L10	L9 and (bevel\$4 or taper\$4 or diagonal\$4 or oblique or slant\$4 or tilt\$4 or trapezoid\$4 or slop\$4 or inward\$3 or outward\$3 or downward\$3 or upword\$3 or rotat\$4)	941
	L9	L8 and (yoke or yok\$4)	2078
	L8	L7 and (open or "c")	166414
\Box	L7	((magnetic adj resonance) or MRI or NMR)	187194
	DB=R	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD; PLUR=YES; OP=ADJ	
	L6	L5 and (gusset)	12
	L5	L4 and ((magnetic adj resonance) or MRI or NMR)	72
	L4	L3 and (shap\$4 with coil)	1024
	L3	(buck\$4 with coil)	4661
	DB=0	USPT; PLUR=YES; OP=ADJ	
	L2	L1	219
	DB=B	PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ	
	L1	fetzner	237

END OF SEARCH HISTORY

Clear Generate Collection Print Fwd Refs Bkwd Refs
Generate OACS

Search Results - Record(s) 1 through 12 of 12 returned.

1. Document ID: US 20040100261 A1

Using default format because multiple data bases are involved.

L6: Entry 1 of 12

File: PGPB

May 27, 2004

PGPUB-DOCUMENT-NUMBER: 20040100261

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040100261 A1

TITLE: Cold mass support structure and helium vessel of actively shielded high

field open MRI magnets

PUBLICATION-DATE: May 27, 2004

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47 US Laskaris, Evangelos Schenectady NY US Huang, Xianrui Clifton Park NY Ogle, Michele Dollar Burnt Hills NY US Palmo, Michael A. Ballston Spa NY US Thompson, Paul S. Stephentown NY

US-CL-CURRENT: <u>324/318</u>; <u>324/319</u>, <u>335/216</u>, <u>335/299</u>

Full Title Citation Front Review Classification Date Reference Sequences Attachments Claims RMC	Drawi De

2. Document ID: US 6828792 B1

L6: Entry 2 of 12

File: USPT

Dec 7, 2004

US-PAT-NO: 6828792

DOCUMENT-IDENTIFIER: US 6828792 B1

TITLE: MRI apparatus and method for imaging

DATE-ISSUED: December 7, 2004

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Danby; Gordon T. Wading River NY Wahl; William H. Smithtown NY Damadian; Raymond V. Woodbury NY

Page 2 of 6 Record List Display

Giambalvo; Anthony J.

Kings Park

NY

US-CL-CURRENT: 324/318; 324/319

Full Title Citation Front Review Classification Date Reference

3. Document ID: US 6617852 B1

L6: Entry 3 of 12

File: USPT

Sep 9, 2003

US-PAT-NO: 6617852

DOCUMENT-IDENTIFIER: US 6617852 B1

TITLE: MRI apparatus

DATE-ISSUED: September 9, 2003

INVENTOR-INFORMATION:

CITY STATE ZIP CODE COUNTRY NAME

Danby; Gordon T. Wading River NY Linardos; John NY Smithtown Damadian; Jevan East Northport NY Damadian; Raymond V. Woodbury NY

US-CL-CURRENT: 324/318; 324/322

Full Title Citation Front Review Classification Date Reference Claims KMC Draw De

4. Document ID: US 6541973 B1

L6: Entry 4 of 12

File: USPT

Apr 1, 2003

US-PAT-NO: 6541973

DOCUMENT-IDENTIFIER: US 6541973 B1

TITLE: MRI apparatus

DATE-ISSUED: April 1, 2003

INVENTOR-INFORMATION:

CITY STATE ZIP CODE COUNTRY NAME

Danby; Gordon T. Wading River NY NY Linardos; John Smithtown Damadian; Jevan East Northport NY Damadian; Raymond V. Woodbury NY

US-CL-CURRENT: 324/318; 324/322

Full Title Citation Front Review Classification Date References

5. Document ID: US 6496007 B1

L6: Entry 5 of 12

File: USPT

Dec 17, 2002

US-PAT-NO: 6496007

DOCUMENT-IDENTIFIER: US 6496007 B1

** See image for <u>Certificate of Correction</u> **

TITLE: MRI apparatus

DATE-ISSUED: December 17, 2002

INVENTOR-INFORMATION:

NAME CITY

STATE ZIP CODE

Damadian; Jevan

East Northport

NY ·

COUNTRY

Linardos; John

Smithtown

NY

Danby; Gordon T.

Wading River

NY

Damadian; Raymond V.

Woodbury

NY

US-CL-CURRENT: <u>324/318</u>; <u>600/415</u>

6. Document ID: US 6469508 B1

Full Title Citation Front Review Classification Date Reference

L6: Entry 6 of 12

File: USPT

Oct 22, 2002

Claims KMC Draw De

US-PAT-NO: 6469508

DOCUMENT-IDENTIFIER: US 6469508 B1

TITLE: MRI apparatus

DATE-ISSUED: October 22, 2002

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Damadian; Jevan East Northport Linardos; John Smithtown Danby; Gordon T. Wading River

Woodbury NY Damadian; Raymond V.

US-CL-CURRENT: 324/318; 324/322

7. Document ID: US 6445186 B1

L6: Entry 7 of 12

File: USPT

NY

NY

NY

Sep 3, 2002

US-PAT-NO: 6445186

DOCUMENT-IDENTIFIER: US 6445186 B1

TITLE: MRI apparatus

DATE-ISSUED: September 3, 2002

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Damadian; Jevan NY East Northport Linardos; John Smithtown NY Danby; Gordon T. Wading River NY

Damadian; Raymond V. Woodbury NY

US-CL-CURRENT: 324/319; 324/320

Eull Title Chalon Front Seview Geschedion Data Bergence

8. Document ID: US 6437571 B1

L6: Entry 8 of 12 File: USPT Aug 20, 2002

US-PAT-NO: 6437571

DOCUMENT-IDENTIFIER: US 6437571 B1

TITLE: MRI apparatus

DATE-ISSUED: August 20, 2002

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Danby; Gordon T. Wading River NY Linardos; John Smithtown NY Damadian; Jevan East Northport NY NY Damadian; Raymond V. Woodbury

US-CL-CURRENT: 324/322; 324/318, 600/410

Full Title Citation Front Review Classification Date Reference

9. Document ID: US 6369571 B1

L6: Entry 9 of 12 File: USPT Apr 9, 2002

US-PAT-NO: 6369571

DOCUMENT-IDENTIFIER: US 6369571 B1

TITLE: MRI apparatus

DATE-ISSUED: April 9, 2002

Record List Display Page 5 of 6

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Damadian; Jevan East Northport NY
Linardos; John Smithtown NY
Danby; Gordon T. Wading River NY

Damadian; Raymond V. Woodbury NY

US-CL-CURRENT: 324/318; 324/319

10. Document ID: US 6335623 B1

L6: Entry 10 of 12 File: USPT Jan 1, 2002

US-PAT-NO: 6335623

DOCUMENT-IDENTIFIER: US 6335623 B1

** See image for Certificate of Correction **

TITLE: MRI apparatus

DATE-ISSUED: January 1, 2002

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Damadian; Jevan East Northport NY
Linardos; John Smithtown NY
Danby; Gordon T. Wading River NY
Damadian; Raymond V. Woodbury NY

US-CL-CURRENT: 324/320; 324/319

FOIL TITLE GREATON FRONT SCHOOL GESCHOOLINN DESCH RESERVOIS

11. Document ID: US 6208145 B1

L6: Entry 11 of 12 File: USPT Mar 27, 2001

US-PAT-NO: 6208145

DOCUMENT-IDENTIFIER: US 6208145 B1

TITLE: MRI apparatus

DATE-ISSUED: March 27, 2001

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Danby; Gordon T. Wading River NY Linardos; John Smithtown NY Damadian; Jevan

East Northport

NY

Damadian; Raymond V.

Woodbury

NY

US-CL-CURRENT: 324/319; 324/318

Full Title Citation Front Review Classification Date Reference Claims KMC Draw D.

12. Document ID: US 6201394 B1

L6: Entry 12 of 12

File: USPT

Mar 13, 2001 .

US-PAT-NO: 6201394

DOCUMENT-IDENTIFIER: US 6201394 B1

** See image for Certificate of Correction **

TITLE: MRI apparatus

DATE-ISSUED: March 13, 2001

INVENTOR-INFORMATION:

NAME

Wading River

STATE ZIP CODE CO

COUNTRY

Danby; Gordon T.

Smithtown

NY NY

Linardos; John

East Northport

NY

Damadian; Jevan
Damadian; Raymond V.

Woodbury

CITY

NY

US-CL-CURRENT: 324/319; 324/320

Full Title Citation Front Review Classification Date Reference	Claims KWC Di
	d Refs Generate OACS
Term	Documents
GUSSET	25119
GUSSETS	16882
(5 AND GUSSET).PGPB,USPT,USOC,EPAB,JPAB,DWPI	,TDBD. 12
(L5 AND (GUSSET)).PGPB,USPT,USOC,EPAB,JPAB,DWPÍ,TDBD	12

Display Format: - Change Format

Previous Page Next Page Go to Doc#

Clear Generate Collection Print Fwd Refs Bkwd Refs
Generate OACS

Search Results - Record(s) 1 through 22 of 22 returned.

1. Document ID: US 20040254419 A1

Using default format because multiple data bases are involved.

L14: Entry 1 of 22

File: PGPB

Dec 16, 2004

PGPUB-DOCUMENT-NUMBER: 20040254419

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040254419 A1

TITLE: Therapeutic assembly

PUBLICATION-DATE: December 16, 2004

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47 Wang, Xingwu Wellsville 'NY US Greenwald, Howard J. Rochester NY US US Lanzafame, John Victor NY NY US Weiner, Michael L. Webster Rochester NY US Connelly, Patrick R.

US-CL-CURRENT: 600/8; 424/1.11, 424/422

Full Title Citation Fight Review Classification Date Reference Sequences Attachments Claims NMC Diaw De

2. Document ID: US 20040210289 A1

L14: Entry 2 of 22

File: PGPB

Oct 21, 2004

PGPUB-DOCUMENT-NUMBER: 20040210289

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040210289 A1

TITLE: Novel nanomagnetic particles

PUBLICATION-DATE: October 21, 2004

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47

Wang, Xingwu Wellsville NY US Greenwald, Howard J. Rochester NY US · Record List Display Page 2 of 11

US-CL-CURRENT: 607/116

Full Title Citation Front Review Classification Date Reference Sequences Attachments Citatins KMC Draw De

3. Document ID: US 20040194289 A1

L14: Entry 3 of 22 File: PGPB Oct 7, 2004

PGPUB-DOCUMENT-NUMBER: 20040194289

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040194289 A1

TITLE: Methods and apparatus for positioning permanent magnetic blocks

PUBLICATION-DATE: October 7, 2004

INVENTOR-INFORMATION:

CITY	STATE	COUNTRY	RULE-47
Beijing	sç	CN	
Florence	SC	US	
Florence	SC	US	
Florence	SC	US	
Tokyo	SC	JP	
Florence		US	
Florence		US	
	Beijing Florence Florence Tokyo Florence	Beijing SC Florence SC Florence SC Tokyo SC Florence	Beijing SC CN Florence SC US Florence SC US Florence SC US Tokyo SC JP Florence US

US-CL-CURRENT: 29/599

Full Title Citation Front Review Classification D.	ite Reference Sequences Attachments Claims (XMC) Draw Da

4. Document ID: US 20040065563 A1

L14: Entry 4 of 22 File: PGPB Apr 8, 2004

PGPUB-DOCUMENT-NUMBER: 20040065563

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040065563 A1

TITLE: Hyperpolarized gas transport and storage devices and associated transport

and storage methods using permanent magnets

PUBLICATION-DATE: April 8, 2004

INVENTOR-INFORMATION:

CITY STATE COUNTRY RULE-47 NAME Durham NC US Hasson, Kenton C. Happer, William Princeton NJ US Chapel Hill Zollinger, Geri T.K. NC US

US-CL-CURRENT: 206/.7

Full Title Citation Front Review Classification Date Reference Sequences Attachments Claims KMC Draw De

5. Document ID: US 20030020578 A1

L14: Entry 5 of 22

File: PGPB

Jan 30, 2003

PGPUB-DOCUMENT-NUMBER: 20030020578

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030020578 A1

TITLE: Magnetic field generator and assembling method thereof

PUBLICATION-DATE: January 30, 2003

INVENTOR-INFORMATION:

NAME

CITY

STATE COUNTRY RULE-47

Aoki, Masaaki

Takatsuki-shi

JP

RULE-47

Tsuzaki, Tsuyoshi

Ibaraki-shi

JP

US-CL-CURRENT: <u>335/299</u>

Full Title Cita	tion Front Review	Classification Date	Reference Sequen	ices Attachments Clair	ns KVVC Dravu
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6. Document ID: US 20030001575 A1

L14: Entry 6 of 22

File: PGPB

STATE

COUNTRY

CA

CA

CA

CA

Jan 2, 2003

PGPUB-DOCUMENT-NUMBER: 20030001575

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030001575 A1

TITLE: C-shaped magnetic resonance imaging system

PUBLICATION-DATE: January 2, 2003

INVENTOR-INFORMATION:

NAME CITY

Richmond Cheng, Illich Jungwirth, Paul J. Burnaby Delta Otter, Alan J.

Wu, Yan Burnaby

US-CL-CURRENT: 324/318

Full Title Citation Front Review Classification Date Reference Sequences:	Attachments Claims KMC Draw De

7. Document ID: US 20020086842 A1

L14: Entry 7 of 22 File: PGPB Jul 4, 2002

PGPUB-DOCUMENT-NUMBER: 20020086842

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020086842 A1

TITLE: Method for transfecting cells using a magnetic field

PUBLICATION-DATE: July 4, 2002

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47

Plank, Christian Seefeld DE Bergemann, Christian Berlin DE

US-CL-CURRENT: 514/44; 435/320.1, 435/446, 435/455, 536/23.1, 604/20

Full Title Citation Front Review Classification Date Reference Sequences Attachments Claims RMC Draw De

8. Document ID: US 20020050895 A1

L14: Entry 8 of 22 File: PGPB May 2, 2002

PGPUB-DOCUMENT-NUMBER: 20020050895

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020050895 A1

TITLE: Magnetic apparatus for \underline{MRI}

PUBLICATION-DATE: May 2, 2002

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47

Zuk, Yuval Haifa IL
Katz, Yoav Rehovot IL
Katznelson, Ehud Ramat Yishai IL
Rotem, Haim Mate Asher IL

US-CL-CURRENT: 335/216

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Affachments | Claims | KMC | Draw De

9. Document ID: US 6781495 B2

L14: Entry 9 of 22 File: USPT Aug 24, 2004

US-PAT-NO: 6781495

DOCUMENT-IDENTIFIER: US 6781495 B2

TITLE: Magnetic field generator and assembling method thereof

• Record List Display Page 5 of 11

DATE-ISSUED: August 24, 2004

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Aoki; Masaaki Takatsuki JP Tsuzaki; Tsuyoshi Ibaraki JP

US-CL-CURRENT: 335/301; 324/319, 335/304

Full | Title | Citation | Front | Review | Classification | Date | Reference | Citation | Citation | IVMC | Citation De

10. Document ID: US 6648130 B1

L14: Entry 10 of 22 File: USPT Nov 18, 2003

US-PAT-NO: 6648130

DOCUMENT-IDENTIFIER: US 6648130 B1

TITLE: Hyperpolarized gas transport and storage devices and associated transport

and storage methods using permanent magnets

DATE-ISSUED: November 18, 2003

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Hasson; Kenton C. Durham NC
Happer; William Princeton NJ
Zollinger; Geri T. K. Chapel Hill NC

US-CL-CURRENT: 206/.7; 206/818, 62/3.1, 62/45.1, 62/914

Full Title Citation Front Review Classification Date Reference Communication Claims FUNC Draw De

11. Document ID: US 6642826 B1

L14: Entry 11 of 22 File: USPT Nov 4, 2003

US-PAT-NO: 6642826

DOCUMENT-IDENTIFIER: US 6642826 B1

TITLE: Magnetic field generator and assembling method thereof

DATE-ISSUED: November 4, 2003

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Aoki; Masaaki Takatsuki JP Tsuzaki; Tsuyoshi Ibaraki JP

US-CL-CURRENT: 335/299; 335/216, 335/301

Full Title Citation Front Review Classification Date Reference Communication Claims AMC DrawsDo

12. Document ID: US 6600401 B2

L14: Entry 12 of 22 File: USPT

Jul 29, 2003

US-PAT-NO: 6600401

DOCUMENT-IDENTIFIER: US 6600401 B2

TITLE: Magnetic apparatus for MRI

DATE-ISSUED: July 29, 2003

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Zuk; YuvalHaifaILKatz; YoavRehovotILKatznelson; EhudRamat YishaiILRotem; HaimMate AsherIL

US-CL-CURRENT: 335/299; 324/318, 324/319, 335/296, 335/306

Full Title Citation Front Review Classification Date Reference

13. Document ID: US 6467157 B1

L14: Entry 13 of 22

File: USPT

Oct 22, 2002

US-PAT-NO: 6467157

DOCUMENT-IDENTIFIER: US 6467157 B1

TITLE: Apparatus for construction of annular segmented permanent magnet

DATE-ISSUED: October 22, 2002

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Livni; Avinoam Haifa IL Katz; Yoav Benyamina IL

US-CL-CURRENT: 29/737; 269/13, 269/14, 29/419.2, 29/602.1, 29/607, 29/719, 29/744, 29/759, 29/760, 29/762, 29/DIG.105, 29/DIG.95

14. Document ID: US 6411187 B1

L14: Entry 14 of 22

File: USPT

Jun 25, 2002

 Record List Display Page 7 of 11

US-PAT-NO: 6411187

DOCUMENT-IDENTIFIER: US 6411187 B1

TITLE: Adjustable hybrid magnetic apparatus

DATE-ISSUED: June 25, 2002

INVENTOR-INFORMATION:

STATE ZIP CODE CITY COUNTRY NAME

Rotem; Haim Mate Asher ILKatznelson; Ehud Ramat Yishai IL

US-CL-CURRENT: 335/296; 324/319, 324/320, 335/298, 335/299, 335/306

Full Title Citation Front Review Classification Date Reference Claims RMC Drain D4

15. Document ID: US 6275039 B1

L14: Entry 15 of 22 File: USPT Aug 14, 2001

US-PAT-NO: 6275039

DOCUMENT-IDENTIFIER: US 6275039 B1

TITLE: Magnetic resonance pre-polarization apparatus

DATE-ISSUED: August 14, 2001

INVENTOR-INFORMATION:

CITY STATE ZIP CODE COUNTRY NAME

Marlborough GB Young; Ian Robert GB Eastham; John Frederick Bath

US-CL-CURRENT: 324/319; 324/300, 324/306, 324/307, 324/309, 324/318

Full Title Citation Front Review Classification Date Reference Claims KMC Draw D

16: Document ID: US 6211676 B1

Apr 3, 2001 L14: Entry 16 of 22 File: USPT

US-PAT-NO: 6211676

DOCUMENT-IDENTIFIER: US 6211676 B1

TITLE: MRI magnets

DATE-ISSUED: April 3, 2001

INVENTOR-INFORMATION:

STATE ZIP CODE COUNTRY NAME CITY

GB Byrne; Alex Francis Caversham

Record List Display
 Page 8 of 11

Parker; Nicholas David

Leamington Spa

GB

Davies; Francis John

Kidlington

GB

US-CL-CURRENT: 324/319; 324/320

Full Title Citation Front Review Classification Date Reference Claims KMC Draw Do

17. Document ID: US 6163240 A

L14: Entry 17 of 22

File: USPT

Dec 19, 2000

US-PAT-NO: 6163240

DOCUMENT-IDENTIFIER: US 6163240 A

TITLE: Magnetic apparatus for MRI

DATE-ISSUED: December 19, 2000

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Zuk; Yuval Haifa IL
Katznelson; Ehud Ramat Yishai IL
Katz; Yoav Rehovot IL
Rotem; Haim Mate Asher IL

US-CL-CURRENT: 335/299; 324/318, 324/319, 324/320, 335/296, 335/302, 335/306

18. Document ID: US 6163151 A

L14: Entry 18 of 22 File: USPT Dec 19, 2000

US-PAT-NO: 6163151

DOCUMENT-IDENTIFIER: US 6163151 A

TITLE: Apparatus and method for making nuclear magnetic measurements in a borehole

DATE-ISSUED: December 19, 2000

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Wisler; Macmillan M. Kingwood TX Schneider; David M. Spring TX

US-CL-CURRENT: 324/303; 324/306

Full Title Citation Front Review Classification Date Reference Claims KMC Draw De

19. Document ID: US 5963117 A

L14: Entry 19 of 22

File: USPT

Oct 5, 1999

US-PAT-NO: 5963117

DOCUMENT-IDENTIFIER: US 5963117 A

TITLE: Opposed magnet-type magnetic circuit assembly with permanent magnets

DATE-ISSUED: October 5, 1999

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Ohashi; Ken Fukui-ken JΡ Yoneda; Yuhito Fukui-ken JΡ Miyata; Koji Fukui-ken JΡ Inoue; Yuji Tokyo JP

US-CL-CURRENT: 335/306; 324/319, 335/296, 335/297

01.0
TAXABLE !

20. Document ID: US 5864275 A

L14: Entry 20 of 22

File: USPT

Jan 26, 1999

US-PAT-NO: 5864275

DOCUMENT-IDENTIFIER: US 5864275 A

TITLE: Opposed magnet-type magnetic circuit assembly with permanent magnets

DATE-ISSUED: January 26, 1999

INVENTOR-INFORMATION:

STATE ZIP CODE COUNTRY NAME CITY

JΡ Ohashi; Ken Fukui-ken Yoneda; Yuhito Fukui-ken JΡ JΡ Miyata; Koji Fukui-ken Inoue; Yuji Tokyo JP

US-CL-CURRENT: 335/306; 324/319, 335/296, 335/297, 335/298

Full Title Citation Front Review Classication Data Reterence Claims SINC Drivido

☐ 21. Document ID: US 5020411 A

L14: Entry 21 of 22 File: USPT Jun 4, 1991

US-PAT-NO: 5020411

DOCUMENT-IDENTIFIER: US 5020411 A

TITLE: Mobile assault logistic kinetmatic engagement device

DATE-ISSUED: June 4, 1991

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Rowan; Larry

Culver

CA

90230

US-CL-CURRENT: 89/1.11; 376/319, 60/203.1, 89/8

Full Title	e Citation Front	Review Classific	ation Date R	eference		Drawa De
					 	,,,,,,,,,,,,

22. Document ID: CN 1404580 A, WO 200153847 A1, AU 200128228 A, US

20030001575 A1

L14: Entry 22 of 22

File: DWPI

Mar 19, 2003

DERWENT-ACC-NO: 2001-596459

DERWENT-WEEK: 200344

COPYRIGHT 2005 DERWENT INFORMATION LTD

TITLE: Open C-shaped permanent magnet structure for magnetic resonance imaging, comprises vertical post supporting horizontal arms of cast steel, with arms

carrying pair of facing magnetised Neodymium plates

Generate Collection Print Fwd Refs Bkwd Refs	Generate
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NEODYMIUM	22772
NEODYMIUMS	0
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NEODYMIAS	0
NDFEB	1441
NDFEBS	0
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(L13 AND (NEODYMIUM OR "NDFEB")).USPT,PGPB,JPAB,EPAB,DWPI,TDBD.	22

Display Format: - Change Format

Clear Generate Collection Print Fwd Refs Bkwd Refs
Generate OACS

Search Results - Record(s) 1 through 6 of 6 returned.

1. Document ID: US 20040254419 A1

Using default format because multiple data bases are involved.

L19: Entry 1 of 6

File: PGPB

Dec 16, 2004

PGPUB-DOCUMENT-NUMBER: 20040254419

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040254419 A1

TITLE: Therapeutic assembly

PUBLICATION-DATE: December 16, 2004

INVENTOR-INFORMATION:

CITY STATE COUNTRY RULE-47 NAME Wellsville NY US Wang, Xingwu US Greenwald, Howard J. Rochester NY Victor NY US Lanzafame, John Webster NY US Weiner, Michael L. Connelly, Patrick R. Rochester NY US

US-CL-CURRENT: 600/8; 424/1.11, 424/422

Full Title Citation Front Review Classification Date Reference Sequences Att	achments Claims KMC Draw De

2. Document ID: US 20030001575 A1

L19: Entry 2 of 6

File: PGPB

Jan 2, 2003

PGPUB-DOCUMENT-NUMBER: 20030001575

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIÉR: US 20030001575 A1

TITLE: C-shaped magnetic resonance imaging system

PUBLICATION-DATE: January 2, 2003

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47

Cheng, Illich Richmond CA
Jungwirth, Paul J. Burnaby CA
Otter, Alan J. Delta CA

Record List Display

Wu, Yan

Burnaby

CA

US-CL-CURRENT: 324/318

Full Title Citation: Front Review Classification Date Reference Sequences Attachments Claims NMC Draw	Ī

3. Document ID: US 5963117 A

L19: Entry 3 of 6

File: USPT

Oct 5, 1999

US-PAT-NO: 5963117

DOCUMENT-IDENTIFIER: US 5963117 A

TITLE: Opposed magnet-type magnetic circuit assembly with permanent magnets

DATE-ISSUED: October 5, 1999

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Ohashi; Ken Fukui-ken JP
Yoneda; Yuhito Fukui-ken JP
Miyata; Koji Fukui-ken JP
Inoue; Yuji Tokyo JP

US-CL-CURRENT: 335/306; 324/319, 335/296, 335/297

Full Title Citation Front Review Classification Date Re	eference Claims KMC Draw Du

4. Document ID: US 5864275 A

L19: Entry 4 of 6

File: USPT

Jan 26, 1999

US-PAT-NO: 5864275

DOCUMENT-IDENTIFIER: US 5864275 A

TITLE: Opposed magnet-type magnetic circuit assembly with permanent magnets

DATE-ISSUED: January 26, 1999

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY Ohashi; Ken Fukui-ken JP

Yoneda; Yuhito Fukui-ken JP Miyata; Koji Fukui-ken JP Inoue; Yuji Tokyo JP

US-CL-CURRENT: 335/306; 324/319, 335/296, 335/297, 335/298

Full Title Citation Front Review Classification Date Reference Citating Colline Colline

5. Document ID: US 5020411 A

L19: Entry 5 of 6

File: USPT

Jun 4, 1991

US-PAT-NO: 5020411

DOCUMENT-IDENTIFIER: US 5020411 A

TITLE: Mobile assault logistic kinetmatic engagement device

DATE-ISSUED: June 4, 1991

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Rowan; Larry

Culver

CA

90230

US-CL-CURRENT: 89/1.11; 376/319, 60/203.1, 89/8

Full Title Citation Front Review Classification Cate Reference

6. Document ID: CN 1404580 A, WO 200153847 A1, AU 200128228 A, US

20030001575 A1

L19: Entry 6 of 6

File: DWPI

Mar 19, 2003

DERWENT-ACC-NO: 2001-596459

DERWENT-WEEK: 200344

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TITLE: Open C-shaped permanent magnet structure for magnetic resonance imaging, comprises vertical post supporting horizontal arms of cast steel, with arms

carrying pair of $\underline{\texttt{facing}}$ magnetised $\underline{\texttt{Neodymium plates}}$

Title Citation Front Review Cla	ssification Date Reference		Claims KWC
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Search Results - Record(s) 1 through 1 of 1 returned.

1. Document ID: US 6211676 B1

Using default format because multiple data bases are involved.

L21: Entry 1 of 1

File: USPT

Apr 3, 2001

US-PAT-NO: 6211676

DOCUMENT-IDENTIFIER: US 6211676 B1

TITLE: MRI magnets

DATE-ISSUED: April 3, 2001

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Byrne; Alex Francis Caversham GB
Parker; Nicholas David Leamington Spa GB
Davies; Francis John Kidlington GB

US-CL-CURRENT: 324/319; 324/320

Full Title Citation Front Review Classification Date Reference	Claims Kool D
Clear Generate Collection Print Fwd Refs Bkwd	Refs Generate OACS
Term	Documents
Term (20 NOT 19).USPT,PGPB,JPAB,EPAB,DWPI,TDBD.	Documents 1

Display Format: - Change Format

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Clear Generate Collection Print Fwd Refs Bkwd Refs
Generate OACS

Search Results - Record(s) 1 through 2 of 2 returned.

1. Document ID: US 20030001575 A1

Using default format because multiple data bases are involved.

L22: Entry 1 of 2

File: PGPB

Jan 2, 2003

PGPUB-DOCUMENT-NUMBER: 20030001575

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030001575 A1

TITLE: C-shaped magnetic resonance imaging system

PUBLICATION-DATE: January 2, 2003

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47 Richmond CA Cheng, Illich Burnaby CA Jungwirth, Paul J. Otter, Alan J. Delta CA Wu, Yan Burnaby CA

US-CL-CURRENT: 324/318

Full Title Citation Front Review Classification Date Reference Sequences: Attachments Claims RMC Draw Do
0 D I TD. ON 1404590 A WO 200152947 A1 ATT 200129229 A U.S.

2. Document ID: CN 1404580 A, WO 200153847 A1, AU 200128228 A, US

20030001575 A1

L22: Entry 2 of 2

File: DWPI

Mar 19, 2003

DERWENT-ACC-NO: 2001-596459

DERWENT-WEEK: 200344

COPYRIGHT 2005 DERWENT INFORMATION LTD

TITLE: Open C-shaped permanent magnet structure for magnetic resonance imaging, comprises vertical post supporting horizontal arms of cast steel, with arms carrying pair of facing magnetised Neodymium plates

Full Title Citation Front Review Classification Date Reference Claims RM	C Draw De
Clear Generate Collection Print Fwd Refs Bkwd Refs Generate	OACS

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(L17 AND (WEDGE OR WEDGED)) USPT,PGPB,JPAB,EPAB,DWPI,TDBD.	2

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Clear Generate Collection Print Fwd Refs Bkwd Refs
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Search Results - Record(s) 1 through 7 of 7 returned.

1. Document ID: US 20040254419 A1

Using default format because multiple data bases are involved.

L26: Entry 1 of 7

File: PGPB

Dec 16, 2004

PGPUB-DOCUMENT-NUMBER: 20040254419

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040254419 A1

TITLE: Therapeutic assembly

PUBLICATION-DATE: December 16, 2004

INVENTOR-INFORMATION:

CITY STATE COUNTRY RULE-47 NAME Wellsville NY US Wang, Xingwu NY US Greenwald, Howard J. Rochester Lanzafame, John Victor NY US US Webster NY Weiner, Michael L. US Connelly, Patrick R. Rochester NY

US-CL-CURRENT: 600/8; 424/1.11, 424/422

Full Title Citation From	Review Classific	ation Date Ref	rence Sequences	Attachments Claim	: KWC Draw De

2. Document ID: US 20030001575 A1

L26: Entry 2 of 7 File: PGPB . Jan 2, 2003

PGPUB-DOCUMENT-NUMBER: 20030001575

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030001575 A1

TITLE: C-shaped magnetic resonance imaging system

PUBLICATION-DATE: January 2, 2003

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47

Cheng, Illich Richmond CA
Jungwirth, Paul J. Burnaby CA
Otter, Alan J. Delta CA

Record List Display

Wu, Yan

Burnaby

CA

US-CL-CURRENT: 324/318

Full Title Citation Front Review Classification Date Reference Sequences Attachments Claims RMC Draw.D.

3. Document ID: US 6211676 B1

L26: Entry 3 of 7

File: USPT

Apr 3, 2001

US-PAT-NO: 6211676

DOCUMENT-IDENTIFIER: US 6211676 B1

TITLE: MRI magnets

DATE-ISSUED: April 3, 2001

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Byrne; Alex Francis Caversham GB
Parker; Nicholas David Leamington Spa GB
Davies; Francis John Kidlington GB

US-CL-CURRENT: 324/319; 324/320

Full Title Citation Front Review Classification Date Reference Communication Claims KNRC Draw De

4. Document ID: US 5963117 A

L26: Entry 4 of 7 File: USPT Oct 5, 1999

US-PAT-NO: 5963117

DOCUMENT-IDENTIFIER: US 5963117 A

TITLE: Opposed magnet-type magnetic circuit assembly with permanent magnets

DATE-ISSUED: October 5, 1999

INVENTOR-INFORMATION:

ZIP CODE COUNTRY NAME CITY STATE Ohashi; Ken Fukui-ken JP Yoneda; Yuhito Fukui-ken JP JP Miyata; Koji Fukui-ken Inoue; Yuji Tokyo JP

US-CL-CURRENT: 335/306; 324/319, 335/296, 335/297

Full Title Citation Front Review Classification Date Reference Claims KWC Draw D

5. Document ID: US 5864275 A

L26: Entry 5 of 7

File: USPT

Jan 26, 1999

US-PAT-NO: 5864275

DOCUMENT-IDENTIFIER: US 5864275 A

TITLE: Opposed magnet-type magnetic circuit assembly with permanent magnets

DATE-ISSUED: January 26, 1999

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Ohashi; Ken Fukui-ken JP Yoneda; Yuhito Fukui-ken JΡ JΡ Miyata; Koji Fukui-ken Inoue; Yuji Tokyo JΡ

US-CL-CURRENT: 335/306; 324/319, 335/296, 335/297, 335/298

Full Title Citation Front Review Classification Date Reference Claims KWC Draw De

6. Document ID: US 5020411 A

L26: Entry 6 of 7 File: USPT Jun 4, 1991

US-PAT-NO: 5020411

DOCUMENT-IDENTIFIER: US 5020411 A

TITLE: Mobile assault logistic kinetmatic engagement device

DATE-ISSUED: June 4, 1991

INVENTOR-INFORMATION:

ZIP CODE COUNTRY STATE NAME CITY

Rowan; Larry 90230 Culver CA

US-CL-CURRENT: 89/1.11; 376/319, 60/203.1, 89/8

Full Title Citation Front Review Classification Date Reference Citatins KMC Draw. De

7. Document ID: CN 1404580 A, WO 200153847 A1, AU 200128228 A, US 20030001575 A1

L26: Entry 7 of 7

File: DWPI

Mar 19, 2003

DERWENT-ACC-NO: 2001-596459

DERWENT-WEEK: 200344

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TITLE: Open C-shaped permanent magnet structure for magnetic resonance imaging, comprises vertical post supporting horizontal arms of cast steel, with arms carrying pair of facing magnetised Neodymium plates

Title Citation Front Review Classification Date Reference	Claims KVWC
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Clear Generate Collection Print Fwd Refs Bkwd Refs
Generate OACS

Search Results - Record(s) 1 through 5 of 5 returned.

1. Document ID: US 20040254419 A1

Using default format because multiple data bases are involved.

L27: Entry 1 of 5

File: PGPB

Dec 16, 2004

PGPUB-DOCUMENT-NUMBER: 20040254419

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040254419 A1

TITLE: Therapeutic assembly

PUBLICATION-DATE: December 16, 2004

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47 Wellsville Wang, Xingwu NY US Greenwald, Howard J. Rochester NY US Lanzafame, John Victor NY US Webster NY US Weiner, Michael L. Connelly, Patrick R. Rochester NY US

US-CL-CURRENT: 600/8; 424/1.11, 424/422

Full Title Citation	Front Review Classif	fication Date Refere	nce Sequences Att	achinerità Ciaims (800)	Drawi Di

2. Document ID: US 6211676 B1

L27: Entry 2 of 5

File: USPT

Apr 3, 2001

US-PAT-NO: 6211676

DOCUMENT-IDENTIFIER: US 6211676 B1

TITLE: MRI magnets

DATE-ISSUED: April 3, 2001

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Byrne; Alex Francis Caversham GB
Parker; Nicholas David Leamington Spa GB

Davies; Francis John Kidlington GB

Record List Display

US-CL-CURRENT: 324/319; 324/320

Full Title Citation Front Review Classification Date Reference. Claims KMC Draw De

3. Document ID: US 5963117 A

L27: Entry 3 of 5

File: USPT

Oct 5, 1999

US-PAT-NO: 5963117

DOCUMENT-IDENTIFIER: US 5963117 A

TITLE: Opposed magnet-type magnetic circuit assembly with permanent magnets

DATE-ISSUED: October 5, 1999

INVENTOR-INFORMATION:

STATE ZIP CODE COUNTRY NAME CITY

JΡ Ohashi; Ken Fukui-ken Yoneda; Yuhito Fukui-ken JΡ JΡ Miyata; Koji Fukui-ken JΡ Inoue; Yuji Tokyo

US-CL-CURRENT: 335/306; 324/319, 335/296, 335/297

Full Title Citation Front Reviews Classification Date Reference

4. Document ID: US 5864275 A

L27: Entry 4 of 5

File: USPT

Jan 26, 1999

US-PAT-NO: 5864275

DOCUMENT-IDENTIFIER: US 5864275 A

TITLE: Opposed magnet-type magnetic circuit assembly with permanent magnets

DATE-ISSUED: January 26, 1999

INVENTOR-INFORMATION:

ZIP CODE STATE COUNTRY NAME CITY

JP Ohashi; Ken Fukui-ken JP Yoneda; Yuhito Fukui-ken JΡ Miyata; Koji Fukui-ken Inoue; Yuji Tokyo JΡ

US-CL-CURRENT: 335/306; 324/319, 335/296, 335/297, 335/298

Full Title Citation Front Review Classification Date Reference

5. Document ID: US 5020411 A

L27: Entry 5 of 5

File: USPT

Jun 4, 1991

US-PAT-NO: 5020411

DOCUMENT-IDENTIFIER: US 5020411 A

TITLE: Mobile assault logistic kinetmatic engagement device

DATE-ISSUED: June 4, 1991

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Rowan; Larry

Culver

CA

90230

US-CL-CURRENT: 89/1.11; 376/319, 60/203.1, 89/8

Full Title Citation Front Review Classification Date Reference	Claims SUNC Drai
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Clear Generate Collection Print Fwd Refs Bkwd Refs
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Search Results - Record(s) 1 through 8 of 8 returned.

1. Document ID: US 5378988 A

Using default format because multiple data bases are involved.

L33: Entry 1 of 8

File: USPT

Jan 3, 1995

US-PAT-NO: 5378988

DOCUMENT-IDENTIFIER: US 5378988 A

TITLE: MRI system having high field strength open access magnet

DATE-ISSUED: January 3, 1995

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Pulyer; Yuly M.

Revere

MA

02151

US-CL-CURRENT: 324/318; 324/319, 335/299

	8 88 TH	Citation Front Review Classification Date Rejetance Citation Claims NMC Disw.D.
····		
	2.	Document ID: US 5347252 A

122. Enter 2 of 0

L33: Entry 2 of 8

File: USPT

Sep 13, 1994

US-PAT-NO: 5347252

DOCUMENT-IDENTIFIER: US 5347252 A

TITLE: Magnetic device having a yoke member for generating a magnetic stray field

DATE-ISSUED: September 13, 1994

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Ries; Gunther

Erlangen

DE

US-CL-CURRENT: <u>335/299</u>; <u>324/318</u>, <u>335/301</u>

Full Title Citation Front Review Classification Date Reference Claims KMC Draw De

3. Document ID: US 5345208 A

L33: Entry 3 of 8

File: USPT

Sep 6, 1994

US-PAT-NO: 5345208

DOCUMENT-IDENTIFIER: US 5345208 A

TITLE: Pole face design for a C-shaped superconducting magnet

DATE-ISSUED: September 6, 1994

INVENTOR-INFORMATION:

CITY STATE ZIP CODE COUNTRY NAME

Dorri; Bizhan Clifton Park NY Laskaris; Evangelos T. Schenectady NY Bedrosian; Gary Delmar NY SC Xu; Bu-Xin Florence

US-CL-CURRENT: 335/301; 324/318, 324/319, 335/216

Full Title Citation	n Front Review Class	fication Date Refer	ince	Claims Kilde D	rave D
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4. Document ID: US 5315276 A

May 24, 1994 L33: Entry 4 of 8 File: USPT

US-PAT-NO: 5315276

DOCUMENT-IDENTIFIER: US 5315276 A

TITLE: Compact superconducting magnet for magnetic resonance imaging

DATE-ISSUED: May 24, 1994

INVENTOR-INFORMATION:

CITY STATE ZIP CODE COUNTRY NAME

Huson; F. Russell The Woodlands TXThe Woodlands TX Pissanetzky; Sergio Larson, III; John D. Palo Alto CA

US-CL-CURRENT: 335/216; 324/319, 335/301

Full Title Citation Front Review Classification Date Reference Claims Kooc Draw De

5. Document ID: US 5378988 A

L33: Entry 5 of 8 File: DWPI Jan 3, 1995

DERWENT-ACC-NO: 1995-051374

DERWENT-WEEK: 199507

COPYRIGHT 2005 DERWENT INFORMATION LTD

TITLE: MRI magnetic resonance imaging system for medical use - has magnet

Page 3 of 4

configuration that provides access for surgeon or other personnel to perform procedures on patient under support of real time MRI image

Full Title Citation Front Review Classification Date Reference

6. Document ID: US 5345208 A, DE 69419833 E, EP 629871 A1, JP 07106153 A, EP 629871 B1

L33: Entry 6 of 8

File: DWPI

Sep 6, 1994

DERWENT-ACC-NO: 1994-285656

DERWENT-WEEK: 199943

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TITLE: Pole face design for C-shaped superconducting magnet - has homogenises magnet field within imaging volume, ferromagnetic core operatively connected to superconducting coil, and has non-ferromagnetic shimming trays

Full Title Citation Front Review Classification Date Reference Claims KWC Draw De

7. Document ID: WO 9315514 A1, EP 724764 A1, US 5315276 A, JP 07503580 W

L33: Entry 7 of 8

File: DWPI

Aug 5, 1993

DERWENT-ACC-NO: 1993-258923

DERWENT-WEEK: 199636

COPYRIGHT 2005 DERWENT INFORMATION LTD

TITLE: Compact superconducting magnet for magnetic resonance imaging - has two flux concentrators on opposing sides of gap with adjacent injection correctors, flux return body and two flux deflectors

Full Fille Gilation Front Review Classification Date Reference Claims RMC Draw 0:

8. Document ID: EP 525246 A1, JP 3205399 B2, DE 4223862 A1, US 5347252 A

L33: Entry 8 of 8 File: DWPI Feb 3, 1993

DERWENT-ACC-NO: 1993-037728

DERWENT-WEEK: 200152

COPYRIGHT 2005 DERWENT INFORMATION LTD

TITLE: Magnetic device with yoke producing stray magnetic field - compensates for

dipole movement of yoke using coil around part of latter

Clear Generate Collection Print Fwd Refs Bkwd Refs Generate OACS

Term	Documents
"5315276"	3
"5345208"	3
"5347252"	2
"5378988"	2
("5347252" "5378988" "5315276" "5345208")! [PN].USPT,PGPB,JPAB,EPAB,DWPI,TDBD.	8
((5315276 5345208 5347252 5378988)! [PN]).USPT,PGPB,JPAB,EPAB,DWPI,TDBD.	8

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Search Results - Record(s) 1 through 33 of 33 returned.

1. Document ID: US 20040267086 A1

Using default format because multiple data bases are involved.

L46: Entry 1 of 33

File: PGPB

Dec 30, 2004

PGPUB-DOCUMENT-NUMBER: 20040267086

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040267086 A1

TITLE: Sensor-equipped and algorithm-controlled direct mechanical ventricular

assist device

PUBLICATION-DATE: December 30, 2004

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47 US Anstadt, Mark P. Augusta GΑ US Anstadt, George L. Tipp City OH MacDonald, Stuart G. Pultneyville NY US Helfer, Jeffrey L. Webster NY US NY US Anstadt, George W. Pittsford

US-CL-CURRENT: 600/17

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | NMC | Draw De

2. Document ID: US 20040100261 A1

L46: Entry 2 of 33

File: PGPB

May 27, 2004

PGPUB-DOCUMENT-NUMBER: 20040100261

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040100261 A1

TITLE: Cold mass support structure and helium vessel of actively shielded high

field open MRI magnets

PUBLICATION-DATE: May 27, 2004

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47

Laskaris, Evangelos Schenectady NY US

Record List Display Page 2 of 16

Clifton Park NY US Huang, Xianrui Ogle, Michele Dollar Burnt Hills NY US Ballston Spa NY US Palmo, Michael A. NY Thompson, Paul S. Stephentown US

US-CL-CURRENT: 324/318; 324/319, 335/216, 335/299

Full Title Citation Front Review Classification Date Reference Sequences: Attachments Claims KMC Draw De

3. Document ID: US 20040077972 A1

L46: Entry 3 of 33 File: PGPB Apr 22, 2004

PGPUB-DOCUMENT-NUMBER: 20040077972

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040077972 A1

TITLE: Localization mechanism for an MRI compatible biopsy device

PUBLICATION-DATE: April 22, 2004

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47

Tsonton, Mark Loveland OH US

C. Tinsley, John III Cincinnati OH US

Thompson, Eric W. Pleasant Plain OH US

US-CL-CURRENT: 600/564

Full Title Citation Front Review Classification Date Reference Sequences Attachments Claims KMC Draw De

4. Document ID: US 20030199785 A1

L46: Entry 4 of 33 File: PGPB Oct 23, 2003

PGPUB-DOCUMENT-NUMBER: 20030199785

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030199785 A1

TITLE: Localization mechanism for an MRI compatible biopsy device

PUBLICATION-DATE: October 23, 2003

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47 Hibner, John A. Mason OH US

McCollister, Gary Todd Blanchester OH US
Beck, David Denis Cincinnati OH US
Little, David Scott Cincinnati OH US

Record List Display Page 3 of 16

US-CL-CURRENT: 600/562

Full Title Citation Front Review Classification Date Reference Sequences Affachments Claims KMC Draw De

5. Document ID: US 20030199754 A1

L46: Entry 5 of 33

File: PGPB

Oct 23, 2003

PGPUB-DOCUMENT-NUMBER: 20030199754

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030199754 A1

TITLE: Method for using an MRI compatible biopsy device with detachable probe

PUBLICATION-DATE: October 23, 2003

INVENTOR-INFORMATION:

COUNTRY NAME CITY STATE RULE-47 Hibner, John Anthony Mason OH US Freeman, Lynetta Jean Mason OH US Sebern, Elizabeth Lynn OH US Cincinnati Pyzoha, Jessica Mary Cincinnati OH US McCoy, Terry Darnell Maineville OH US

US-CL-CURRENT: 600/411

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWC | Draw Do

6. Document ID: US 20030199753 A1

L46: Entry 6 of 33

File: PGPB

Oct 23, 2003

PGPUB-DOCUMENT-NUMBER: 20030199753

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030199753 A1

TITLE: $\underline{\mathtt{MRI}}$ compatible biopsy device with detachable probe

PUBLICATION-DATE: October 23, 2003

INVENTOR-INFORMATION:

CITY STATE COUNTRY RULE-47 NAME Hibner, John Anthony Mason OH US Albercht, Thomas Edward Cincinnati OH US Schemberger, Richard F. Cincinnati OH US Beck, David Denis Cincinnati OH US

US-CL-CURRENT: 600/411

Full Title Citation Front Review Classification Date Reference Sequences Attachments Claims RMC Draw Do

7. Document ID: US 20030125793 A1

L46: Entry 7 of 33

File: PGPB

Jul 3, 2003

PGPUB-DOCUMENT-NUMBER: 20030125793

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030125793 A1

TITLE: Bioprosthetic cardiovascular valve system

PUBLICATION-DATE: July 3, 2003

INVENTOR-INFORMATION:

NAME

CITY

STATE

COUNTRY

RULE-47

Vesely, Ivan

Lakewood

OH

US

US-CL-CURRENT: 623/1.11; 606/108

Full Title Citation Front Review Classification Date Reference Sequences Attachments Claims RMC Draw. Do

8. Document ID: US 20020145426 A1

L46: Entry 8 of 33

File: PGPB

Oct 10, 2002

PGPUB-DOCUMENT-NUMBER: 20020145426

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020145426 A1

TITLE: Support structure for open MRI apparatus

PUBLICATION-DATE: October 10, 2002

INVENTOR-INFORMATION:

NAME

CITY

STATE

RULE-47 COUNTRY

Minas, Constantinos

Slingerlands

NY NY

US

Murray, F. Scott

Schenectady

US

US-CL-CURRENT: 324/318; 324/309, 324/319

Full Title Citation Front Review Classification Date Reference Sequences Attachments Claims KMC Diswibs

9. Document ID: US 20010002445 A1

L46: Entry 9 of 33

File: PGPB

May 31, 2001

PGPUB-DOCUMENT-NUMBER: 20010002445 PGPUB-FILING-TYPE: new-utility

DOCUMENT-IDENTIFIER: US 20010002445 A1

TITLE: Bioprosthetic cardiovascular valve system

PUBLICATION-DATE: May 31, 2001

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47

Vesely, Ivan

Cleveland Heights

OH

US

US-CL-CURRENT: $\underline{623}/\underline{2.11}$; $\underline{623}/\underline{2.12}$, $\underline{623}/\underline{2.38}$, $\underline{623}/\underline{900}$, $\underline{623}/\underline{904}$

Full Title Citation Front Review Classificati	on Date Reference Sequences Attac	hments Claims KMC Draw De
10. Document ID: US 6828792 I	31	
L46: Entry 10 of 33	File: USPT	Dec 7, 2004

US-PAT-NO: 6828792

DOCUMENT-IDENTIFIER: US 6828792 B1

TITLE: MRI apparatus and method for imaging

DATE-ISSUED: December 7, 2004

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Wading River Danby; Gordon T. NY Smithtown Wahl; William H. NY Woodbury NY Damadian; Raymond V.

Giambalvo; Anthony J. Kings Park . NA

US-CL-CURRENT: <u>324/318</u>; <u>324/319</u>

Full Title Citation Front Review Classification (Osto Reference	Claims RV/C Draw Do
11. Document ID: US 6717408 B2		
L46: Entry 11 of 33	File: USPT	Apr 6, 2004

US-PAT-NO: 6717408

DOCUMENT-IDENTIFIER: US 6717408 B2

TITLE: Support structure for open MRT apparatus

DATE-ISSUED: April 6, 2004

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Slingerlands NY Minas; Constantinos Murray; F. Scott Schenectady NY

Page 6 of 16 Record List Display

US-CL-CURRENT: <u>324/318</u>; <u>324/307</u>

Full Title Citation Front Review Classification Date Reference

12. Document ID: US 6677753 B1

L46: Entry 12 of 33

File: USPT

Jan 13, 2004

US-PAT-NO: 6677753

DOCUMENT-IDENTIFIER: US 6677753 B1

** See image for Certificate of Correction **

TITLE: Stand-up MRI apparatus

DATE-ISSUED: January 13, 2004

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Danby; Gordon T. Wading River NY Damadian; Jevan East Northport NY Linardos; John Smithtown NY Woodbury NY Damadian; Raymond V. Hsieh; Hank Berkeley CA

Wahl; William H. Smithtown NY

US-CL-CURRENT: 324/318; 324/319

Full Title Odation Front Review Classification Date Reference Claims KWC Draw D4

13. Document ID: US 6617852 B1

L46: Entry 13 of 33

File: USPT Sep 9, 2003

US-PAT-NO: 6617852

DOCUMENT-IDENTIFIER: US 6617852 B1

TITLE: MRI apparatus

DATE-ISSUED: September 9, 2003

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Danby; Gordon T. Wading River NY Linardos; John Smithtown NY Damadian; Jevan East Northport NY Damadian; Raymond V. NY Woodbury

US-CL-CURRENT: 324/318; 324/322

Full Title Citation Front Review Classification Date Reference Claims KMC Draw De

14. Document ID: US 6541973 B1

L46: Entry 14 of 33

File: USPT

Apr 1, 2003

US-PAT-NO: 6541973

DOCUMENT-IDENTIFIER: US 6541973 B1

TITLE: MRI apparatus

DATE-ISSUED: April 1, 2003

INVENTOR-INFORMATION:

STATE ZIP CODE COUNTRY CITY NAME

Danby; Gordon T. Wading River NY Linardos; John Smithtown NY Damadian; Jevan East Northport NY

NY Damadian; Raymond V. Woodbury

US-CL-CURRENT: 324/318; 324/322

Full Title Citation Front Review Classification Date Reference Claims Will Draw De

15. Document ID: US 6530952 B2

L46: Entry 15 of 33

File: USPT

Mar 11, 2003

US-PAT-NO: 6530952

DOCUMENT-IDENTIFIER: US 6530952 B2

TITLE: Bioprosthetic cardiovascular valve system

DATE-ISSUED: March 11, 2003

INVENTOR-INFORMATION:

ZIP CODE STATE COUNTRY NAME CITY

OH Cleveland Heights Vesely; Ivan

US-CL-CURRENT: 623/2.18; 623/1.24, 623/1.26

Full Title Citation From Review Classification Date Reference 16. Document ID: US 6496007 B1

File: USPT

L46: Entry 16 of 33

Dec 17, 2002

US-PAT-NO: 6496007

DOCUMENT-IDENTIFIER: US 6496007 B1

Record List Display Page 8 of 16

** See image for Certificate of Correction **

TITLE: MRI apparatus

DATE-ISSUED: December 17, 2002

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Damadian; Jevan East Northport NY
Linardos; John Smithtown NY
Danby; Gordon T. Wading River NY
Damadian; Raymond V. Woodbury NY

US-CL-CURRENT: 324/318; 600/415

Full Title Citation Front Review Classification Date Reference Claims KWC Draw De

17. Document ID: US 6469508 B1

L46: Entry 17 of 33 File: USPT Oct 22, 2002

US-PAT-NO: 6469508

DOCUMENT-IDENTIFIER: US 6469508 B1

TITLE: MRI apparatus

DATE-ISSUED: October 22, 2002

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Damadian; Jevan East Northport NY
Linardos; John Smithtown NY
Danby; Gordon T. Wading River NY
Damadian; Raymond V. Woodbury NY

US-CL-CURRENT: 324/318; 324/322

File: USPT

Sep 3, 2002

L46: Entry 18 of 33

US-PAT-NO: 6445186

DOCUMENT-IDENTIFIER: US 6445186 B1

TITLE: MRI apparatus

DATE-ISSUED: September 3, 2002

Record List Display Page 9 of 16

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Damadian; Jevan East Northport NY
Linardos; John Smithtown NY
Danby; Gordon T. Wading River NY

Damadian; Raymond V. Woodbury NY

US-CL-CURRENT: 324/319; 324/320

Full Title Citation Front Review Classification Date Reference

☐ 19. Document ID: US 6437571 B1

L46: Entry 19 of 33 File: USPT Aug 20, 2002

US-PAT-NO: 6437571

DOCUMENT-IDENTIFIER: US 6437571 B1

TITLE: MRI apparatus

DATE-ISSUED: August 20, 2002

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Danby; Gordon T. Wading River NY
Linardos; John Smithtown NY
Damadian; Jevan East Northport NY
Damadian; Raymond V. Woodbury NY

US-CL-CURRENT: 324/322; 324/318, 600/410

Full Title Citation Front Review Classification Date Reference Citation Classific NWC Dispussion

20. Document ID: US 6369571 B1

L46: Entry 20 of 33 File: USPT Apr 9, 2002

US-PAT-NO: 6369571

DOCUMENT-IDENTIFIER: US 6369571 B1

TITLE: MRI apparatus

DATE-ISSUED: April 9, 2002

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Damadian; Jevan East Northport NY
Linardos; John Smithtown NY
Danby; Gordon T. Wading River NY

Record List Display

Damadian; Raymond V.

Woodbury

NY

US-CL-CURRENT: 324/318; 324/319

Full Title Citation Front Review Classification Date Reference Claims Claims AMC Draw Do

21. Document ID: US 6346816 B1

L46: Entry 21 of 33

File: USPT

Feb 12, 2002

US-PAT-NO: 6346816

DOCUMENT-IDENTIFIER: US 6346816 B1

TITLE: Method and apparatus for maging

DATE-ISSUED: February 12, 2002

INVENTOR-INFORMATION:

NAME CITY

Y STATE ZIP CODE COUNTRY

Damadian; Raymond V.

Woodbury
Wading River

NY NY

Danby; Gordon
Persoons; James J.

East Northport

NY

US-CL-CURRENT: 324/319; 324/320

Full Title Citation Front Review Classification Date Reference Claims KNN	C Drawk De

22. Document ID: US 6335623 B1

L46: Entry 22 of 33

File: USPT

Jan 1, 2002

US-PAT-NO: 6335623

DOCUMENT-IDENTIFIER: US 6335623 B1

** See image for Certificate of Correction **

TITLE: MRI apparatus

DATE-ISSUED: January 1, 2002

INVENTOR-INFORMATION:

NAME CITY

East Northport

STATE ZIP CODE

COUNTRY

Damadian; Jevan

· Smithtown

NY

NY

Linardos; John Danby; Gordon T.

Wading River

NY

Damadian; Raymond V.

Woodbury

NY

US-CL-CURRENT: 324/320; 324/319

Full Title Citation Front Review Classification Date Reference Claims KMC Draw Do

23. Document ID: US 6315112 B1

L46: Entry 23 of 33

File: USPT

Nov 13, 2001

US-PAT-NO: 6315112

DOCUMENT-IDENTIFIER: US 6315112 B1

TITLE: Method and package for storing a pressurized container containing a drug

DATE-ISSUED: November 13, 2001

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Garrill; Karl Andrew Hertford GB

Haan; Richard J. Germantown TN Herman; Craig Steven Raleigh NC

Walker; Richard Ian Hertford GB

US-CL-CURRENT: 206/204; 206/438, 206/439

Full Title Citation	Front Review (Classification Da	ite Reference		Ĭ.	laims KWC	Draw, De
			3, 2,000				
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24. Document ID: US 6208145 B1

L46: Entry 24 of 33 File: USPT Mar 27, 2001

US-PAT-NO: 6208145

DOCUMENT-IDENTIFIER: US 6208145 B1

TITLE: MRI apparatus

DATE-ISSUED: March 27, 2001

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Danby; Gordon T. Wading River NY
Linardos; John Smithtown NY
Damadian; Jevan East Northport NY
Damadian; Raymond V. Woodbury NY

US-CL-CURRENT: 324/319; 324/318

Full Title Citation Front Review Classification Date Reference Claims RMC Draw. Co.

25. Document ID: US 6201394 B1

L46: Entry 25 of 33 File: USPT Mar 13, 2001

US-PAT-NO: 6201394

DOCUMENT-IDENTIFIER: US 6201394 B1

** See image for Certificate of Correction **

TITLE: MRI apparatus

DATE-ISSUED: March 13, 2001

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Danby; Gordon T. Wading River NY
Linardos; John Smithtown NY
Damadian; Jevan East Northport NY

Damadian; Raymond V. Woodbury NY

US-CL-CURRENT: <u>324/319</u>; <u>324/320</u>

Full Title Citation Front Review Classification Date Reference Claims KMC Draw D.

26. Document ID: US 6194533 B1

L46: Entry 26 of 33 File: USPT Feb 27, 2001

US-PAT-NO: 6194533

DOCUMENT-IDENTIFIER: US 6194533 B1

TITLE: Liner film for bulk container and container liner

DATE-ISSUED: February 27, 2001

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY Nishimura; Toshihiro Ichihara JP Inoue; Hiroshi Ichihara JP JΡ Tsují; Yoichiro Ichihara Hiraoka; Takashi Sue-cho JP

US-CL-CURRENT: 526/348.1; 383/120, 493/189, 493/243, 493/934, 525/240, 526/348,

526/352

Full Title Citation Front Review Classification Date Reference Communication Claims RWC Draw De

27. Document ID: US 6013035 A

L46: Entry 27 of 33 File: USPT Jan 11, 2000

US-PAT-NO: 6013035

DOCUMENT-IDENTIFIER: US 6013035 A

** See image for <u>Certificate of Correction</u> **

Record List Display Page 13 of 16

TITLE: Apparatus for performing biopsies and the like

DATE-ISSUED: January 11, 2000

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Unger; Evan Tucson AZ
Pereles; Frederick Scott Tucson AZ

US-CL-CURRENT: 600/562; 606/167

EUI.	Title Citation Front Review Classification Date	Reference	Claims KMC Draw De
	28. Document ID: US 5628327 A	·	·····
	Entry 28 of 33	File: USPT	May 13, 1997

US-PAT-NO: 5628327

DOCUMENT-IDENTIFIER: US 5628327 A

** See image for Certificate of Correction **

TITLE: Apparatus for performing biopsies and the like

DATE-ISSUED: May 13, 1997

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Unger; Evan Tucson AZ Pereles; Frederick S. Tucson AZ

US-CL-CURRENT: 600/562

Full	Title Citation Front Review Classification Date	Reference	Jaims KWC Draw De
······································		·	······
	29. Document ID: US 5457831 A		
L46:	Entry 29 of 33	File: USPT	Oct 17, 1995

US-PAT-NO: 5457831

DOCUMENT-IDENTIFIER: US 5457831 A

TITLE: Ventilator, care cart and motorized transport each capable of nesting within

and docking with a hospital bed base

DATE-ISSUED: October 17, 1995

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Foster; L. Dale Brookville IN Reeder; Ryan A. Brookville IN

Record List Display Page 14 of 16

US-CL-CURRENT: 5/510; 5/503.1

Full Title Citation Front Review Classification Date Reference Claims KMC Draw De

30. Document ID: US 5337845 A

L46: Entry 30 of 33

File: USPT

Aug 16, 1994

US-PAT-NO: 5337845

DOCUMENT-IDENTIFIER: US 5337845 A

TITLE: Ventilator, care cart and motorized transport each capable of nesting within

and docking with a hospital bed base

DATE-ISSUED: August 16, 1994

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Foster; L. Dale

Brookville

IN

Reeder; Ryan A.

Brookville

IN

US-CL-CURRENT: <u>180/11</u>; <u>180/13</u>, <u>180/19.1</u>, <u>180/65.1</u>, <u>5/510</u>

Full Title Citation Front Review Classification Date Reference Communication Date Reference Communication Date

11. Document ID: US 5335651 A

L46: Entry 31 of 33

File: USPT

Aug 9, 1994

US-PAT-NO: 5335651

DOCUMENT-IDENTIFIER: US 5335651 A

TITLE: Ventilator and care cart each capable of nesting within and docking with a

hospital bed base

DATE-ISSUED: August 9, 1994

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE C

COUNTRY

Foster; L. Dale

Brookville

IN

Reeder; Ryan A.

Brookville

Full Title Citation Front Review Classification Date Reference

IN

US-CL-CURRENT: 128/202.13; 128/202.27, 128/897, 248/129, 296/20, 5/2.1, 5/503.1,

5/658

......

☐ 32. Document ID: US 4758812 A

L46: Entry 32 of 33

File: USPT

Jul 19, 1988

Page 15 of 16 Record List Display

US-PAT-NO: 4758812

DOCUMENT-IDENTIFIER: US 4758812 A

TITLE: Frame structure for a magnet system for nuclear spin tomography

DATE-ISSUED: July 19, 1988

INVENTOR-INFORMATION:

Siebold; Horst

CITY STATE ZIP CODE COUNTRY NAME

Neunkirchen a. Brand Forster; Helmut Erlangen

DE

DE

US-CL-CURRENT: 335/301; 324/320, 335/299

Full Title Citation Front Review Classification Date Reference

33. Document ID: US 4560933 A

L46: Entry 33 of 33

File: USPT

Dec 24, 1985

US-PAT-NO: 4560933

DOCUMENT-IDENTIFIER: US 4560933 A

TITLE: Apparatus for adjustably mounting coils of a magnet system for nuclear spin

tomography

DATE-ISSUED: December 24, 1985

INVENTOR-INFORMATION:

CITY STATE ZIP CODE COUNTRY NAME

Forster; Helmut Neunkirchen DE Siebold; Horst Erlangen DE Neunkirchen Heinzelmann; Karl-Georg

US-CL-CURRENT: 324/319; 336/65

Full Title Colation Front Review Classification Date Reference	Claims K0	NC Draw
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Term	Documents	
GUSSET	17233	
GUSSETS	11940	
(GUSSET AND 45).PGPB,USPT,EPAB,JPAB,DWPI,TDBD.	33	
(L45 AND (GUSSET)).PGPB,USPT,EPAB,JPAB,DWPI,TDBD.	33	

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L46: Entry 8 of 33

File: PGPB

Oct 10, 2002

DOCUMENT-IDENTIFIER: US 20020145426 A1

TITLE: Support structure for open MRI apparatus

Abstract Paragraph:

An $\underline{\text{open}}$ or split type $\underline{\text{MRI}}$ apparatus has two axially spaced magnet coil half sections separated and supported by a compact support structure. Only two diametrically opposed supports are needed to react the high axial and torsional loads produced or received by the $\underline{\text{MRI}}$ apparatus. One support is loaded under pure compression, and the other support is loaded under compression and tension.

Summary of Invention Paragraph:

[0001] The present invention relates in general to structural supports for $\underline{\text{magnetic}}$ resonance imaging ($\underline{\text{MRI}}$) apparatus and relates in particular to an $\underline{\text{open MRI}}$ apparatus having axially-spaced pairs of magnet coils supported by a pair of diametrically opposed supports.

Summary of Invention Paragraph:

[0002] An $\underline{\text{MRI}}$ magnet is characterized as $\underline{\text{open}}$ when there is an accessible, room temperature, physical gap provided between a pair of superconducting magnet coils. An $\underline{\text{open MRI}}$ magnet is desirable as it improves patient comfort and accessibility as compared to closed $\underline{\text{MRI}}$ magnets which many patients consider uncomfortable and which limit patient access.

Summary of Invention Paragraph:

[0003] In order to provide the desired openness and create an open gap around a patient imaging region, a pair of magnet coil assemblies can be separated into two axially-spaced half sections. The half sections of the magnet produce high attractive magnetic forces which must be reacted with a structural support system that separates and supports the half sections and prevents the magnet coils from collapsing upon one another.

Summary of Invention Paragraph:

[0004] Typical axial forces for a 1.0 T $\underline{\text{MRI}}$ magnet are in the range of about 160,000 lbs. (711 KN). Prior $\underline{\text{MRI}}$ support structures reacted these axial forces by an arrangement of axial posts which interconnected the two magnet half sections. The numerous posts limited the openness of the magnet.

Summary of Invention Paragraph:

[0005] An $\underline{\text{MRI}}$ support structure must not only axially separate and axially support the two magnet half sections during operation of the $\underline{\text{MRI}}$ apparatus, the support structure should also provide circumferential support to accommodate torsional or twisting forces which may be applied to the half sections during, for example, shipping, installation, mobile and normal operation. Moreover, it is desirable to provide such a support system which resists the transmission of floor-induced vibrations from the surrounding building structure to the $\underline{\text{MRI}}$ apparatus.

Summary of Invention Paragraph: '

[0006] Accordingly, a need exists for a robust support structure for an open MRI apparatus which reacts high axial loads produced during operation of the apparatus, without adversely affecting the openness of the gap defined between two MRI magnet

half sections.

Summary of Invention Paragraph:

[0007] A further need exists for such a structure which reacts tensile and compressive loads produced by a pair of \underline{MRT} half sections as well as any torsional loads which may be applied to the half sections.

Summary of Invention Paragraph:

[0008] Another need exists for a support structure for an open MRI magnet assembly which resists the transmission of vibrations from the surrounding building floor.

Summary of Invention Paragraph:

[0010] A further object of the invention is the provision of such a support structure which uses only two dramatically opposed supports for connecting together two $\underline{\texttt{MRI}}$ half sections to provide a high degree of openness with a minimum of patient obstruction.

Summary of Invention Paragraph:

[0013] Still another object of the invention is the provision of such a support structure which has very high bending, shear and torsional natural frequencies so as to make the $\underline{\texttt{MRI}}$ apparatus more tolerant to floor induced vibrations.

Summary of Invention Paragraph:

[0014] These and other objects are met by the present invention which is directed to a support structure for interconnecting and supporting a pair of half magnet sections of an MRI apparatus. The support structure includes two axially-extending supports or columns located diametrically opposite one another on the outer circumferential periphery of a pair of MRI magnet coil half sections. The opposed supports have unequal structural configurations and different cross sections and accommodate different types of loading.

Summary of Invention Paragraph:

[0016] The larger support is radially offset to one side of the magnet assembly to enable the <u>open</u> magnet to maintain a high degree of openness and to improve patient comfort and accessibility. In order to provide for the flow of cryogenic fluid, such as liquid helium, between the two magnet half sections, at least the larger support includes a hollow fluid flow portion.

Summary of Invention Paragraph:

[0017] To further enhance the openness of the <u>MRI</u> system, the outer vacuum container can be formed with an inner and outer conical portion to further reduce encroachment of the structure into the region of the imaging gap.

Brief Description of Drawings Paragraph:

[0020] FIG. 1 is a schematic perspective view of a helium vessel of an $\underline{\tt MRT}$ apparatus constructed in accordance with the present invention;

Brief Description of Drawings Paragraph:

[0021] FIG. 2A is an axial cross sectional view of an $\underline{\text{MRI}}$ apparatus constructed in accordance with the present invention taken along section line 2A-2A of the representative helium vessel of FIG. 1. FIG. 2A is sectioned through the top half of a pair of diametrically opposed supports and is a mirror image of the lower half of the helium representative vessel of FIG. 1.

Detail Description Paragraph:

[0044] By circumferentially offsetting the two radially outer posts 54 on opposite sides of the radially inner post 50, the three posts 50, 54, 54 of the second support 18 provide a support structure which also resists and reacts circumferential torsional and shear loads. Moreover, by locating the first and second supports diametrically opposite one another and radially outwardly from the

inner magnet coil portions 28, the support structure of the magnet half sections 12, 14 has very high bending, shear and torsional natural frequencies, which makes the MRI magnet assembly more tolerant to floor induced vibrations.

Detail Description Paragraph:

[0046] It should be noted that the largest electromagnetic forces occur on the main coil 34 and shield coil 36. For this reason, the magnet half sections 12, 14 are strongly reinforced in these areas. This strength is provided by a series of concentric cylindrical structural support members and a series of radially-extending circumferentially-spaced gusset plates as described below.

Detail Description Paragraph:

[0048] Additional rigidity is provided to each of the magnet half sections 12, 14 by a series of radially-extending circumferentially-spaced <u>gusset</u> plates 72. Plates 72 may be welded to the inner and outer flanges 66, 68 as well as to the inner cylinder 64. From 8 to 32 (or more) <u>gussets</u> plates 72 may be used to reinforce the magnet half sections 12, 14 via arrangement in a spoke-like array as seen in FIG.

Detail Description Paragraph:

[0052] Both the helium vessel support posts 16, 50, 54 and the thermal shield posts 94, 96 are enclosed in the outer vacuum container posts 100, 102, as seen in FIG. 5A. The posts 100, 102 rigidly interconnect the two halves of the outer vacuum container 92 together. The upper half of the container 92 is shown in FIG. 7A and the lower half is shown in FIG. 7B. A top view of the outer vacuum container is shown in FIG. 11. Post 100 is cylindrical in shape and post 102 is six sided to compliment the six sided section of the thermal shield post 96.

CLAIMS:

1. An <u>open MRI</u> apparatus, comprising: a first magnet half section; a second magnet half section; and a support structure interconnecting and supporting said first and second magnet half sections, said support structure comprising a first support and a second support and wherein said first support is loaded under compression and said second support is loaded under compression and tension.

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Jul 19, 1988 L46: Entry 32 of 33 File: USPT

DOCUMENT-IDENTIFIER: US 4758812 A

TITLE: Frame structure for a magnet system for nuclear spin tomography

Abstract Text (1):

A frame structure for supporting individual magnetic coils forming a magnet system used in nuclear spin tomography comprises several frame parts made from a ferromagnetic material to provide relatively simple magnetic shielding. The individual magnetic coils are concentrically aligned one behind the other along a common axis to form the magnet system. Several elongate beam, rod, or plate-shaped magnetic shielding elements extend parallel to the common axis and are evenly distributed in the circumferential direction around the magnet system thus forming a generally cylindrical surface. End-plate magnetic shielding parts having a central opening of predetermined radius are provided at the end faces of the cylindrical surface formed by the shielding elements to create a cage-like frame structure. Coil receiving elements can be used to rigidly connect the axis-parallel shielding elements with the individual magnetic coils.

Brief Summary Text (3):

Picture-producing methods have been developed in the field of medical diagnostics wherein by calculation or measurement, integral resonance signals of the nuclei of a given body element to be examined (particularly that of a human body) are analyzed. From the spatial spin density and/or the relaxation time distribution obtained in this manner, an image similar to that of X-ray tomography may then be constructed. Various techniques of this manner are well known under the designation "Nuclear Spin Tomography" (nuclear <u>magnetic resonance</u> tomography) or "Zeugmatography".

Brief Summary Text (5):

The base field magnet may be designed as a system of, for example, six individual ring-shaped magnetic coils which are lined up one behind the other along a common axis in the direction of the desired field orientation of the magnetic base field. A frame structure, such as the one disclosed in European Patent No. 0 102 486 A1 comprising several frame parts which extend parallel to the common axis is used for mounting and/or spatially adjusting the individual magnetic coils. In order for the desired high homogeneity of the magnetic field to be achieved, fine geometric adjustments must be made to at least one of the individual coils. European Patent No. 0 102 486 A1, mentioned above, discloses adjusting and holding means which are particularly well suited for this purpose.

Brief Summary Text (10):

According to the invention, these problems are solved by integrating into the frame structure elongate beam, rod, or plate-shaped magnetic shielding elements in connection with end-plate magnetic shielding parts. The beam, rod or plate shaped elements represent the frame parts of the structure extending parallel to the common axis of the magnetic coils. In this manner a compact highly stable frame structure is assured wherein the frame structure performs the function of the magnetic shielding. Also the magnetic shielding frame structure allows easy access to the individual coils for fine adjustment.

Detailed Description Text (2):

Referring to FIG. 1, a first embodiment of a magnet system and frame structure used in nuclear spin resonance technology is shown. The magnet system designated generally at 2 is formed by several individual normal or superconducting coils 3-8 arranged concentrically with respect to the horizontal z-axis of an orthogonal xyz coordinate system. These coils provide a sufficiently homogeneous magnetic base field in a central imaging range, at the center of which M is located the origin of the xyz coordinate system. The magnet system 2 being cylindrical in shape allows for axial access to the homogeneous central imaging range through the end faces thereof. For example, a human body which is to be examined can be placed in the central field region along the z-axis.

Detailed Description Text (3):

The individual annular magnetic coils 3-8 of the magnet system 2 are concentrically lined up one behind the other along the z-axis and are held within a frame structure 10. Two of the magnetic coils, preferably the coils 4 and 7, located adjacent to magnetic coils 3 and 8, respectively, which are next to the end faces, are rigidly connected to the frame structure 10. The rigid connection is made by ring-shaped coil-receiving elements 12 and 13 made from a non-ferromagnetic material, for example, from a casting of an aluminum alloy. These ring-shaped elements lie in a plane perpendicular to the z-axis, i.e., in a radial plane. The remaining magnetic coils 3, 5, 6 and 8 are braced against at least one bottom part 16 through separate support devices 15 within the frame structure 10. In addition, these magnetic coils may be mutually aligned by means of special mechanical positioning devices 17 which are also attached to the frame structure 10. Examples of such support devices 15 and positioning device 17 can be seen from the above mentioned European Patent No. 0 102 486 A1.

Detailed Description_Text (4):

The parts of the frame structure 10 extending parallel to the common z-axis are formed by several elongate beam, rod, or plate-shaped shielding elements 19 made from a ferromagnetic material. The arrangement of these elements 19 is shown in detail in FIGS. 2, 4 and 5. As is further shown from FIG. 1, end-plate shielding parts 21 and 22 made from a ferromagnetic material are attached to the end faces of the frame structure 10. Each end plate shielding part has a central opening 23 of a predetermined size. These shielding parts, also designated as pole irons, are required to enable sufficient shielding action. The end plates are rigidly connected to the elongate magnetic shielding elements 19, for example, by a screw connection. In this manner, a frame structure of sufficiently high mechanical stability consisting of the parts 12, 13, 19, 21 and 22 is assured.

Detailed Description Text (5):

The design of the frame structure 10 is shown more clearly from the cross sectional views of FIG. 2, taken partly in a plane through the magnetic coil 4 (left half of FIG. 2) and partly in a plane through the magnetic coil 3 (right half of FIG. 2). The ring-like coil receiving elements 12 and 13, of the frame structure 10 are identically designed. However, only element 12 is visible from FIG. 2. The ringlike coil receiving elements 12 and 13 may be composed of several segment-like individual pieces 12a to 12e made from a nonmagnetic material as shown in FIG. 2. These individual pieces may be bolted together to form the ring-like coil receiving elements 12, 13. In addition, the segment-like pieces 12a to 12e have several axial openings or feedthroughs 24 all of which have the same dimensions into which the elongate beam or rod-like magnetic shielding elements 19 may be inserted. A preferred location for the openings 24 and the elongate magnetic shielding elements 19 is chosen such that they lie on a common imaginary cylindrical surface about the z-axis surrounding the circumferential periphery of the magnet system. The openings 24 and elongate magnetic shielding elements 19 are evenly distributed around the zaxis as seen in the circumferential direction. The shape and operation of the elongate magnetic shielding elements 19 representing the parts of the frame structure 10 extending in the axial direction are known per se (see, European Pat. No. 0 141 149 A1).

Detailed Description Text (7):

A further embodiment of a frame structure 28 about a magnet system 2 is shown in FIGS. 3 and 4. The presentation of FIGS. 3 and 4 corresponds largely to the presentation given for FIGS. 1 and 2. The frame structure 28 differs essentially from the frame structure 10 of FIGS. 1 and 2 only in that it has no special coil receiving elements made from a non-magnetic material through which the magnetic coils 4 and 7 are utilized for additional stiffening of the frame structure. The frame structure 28 consists substantially of the ferromagnetic end plates 21 and 22 together with the axially extending elongate magnetic shielding elements, in this case of rod-like shape 29, to form a rigid unit. In this embodiment the frame structure 28 is formed by the cage-like shielding itself. This has the advantage that the entire frame structure surrounding the magnetic coil system can be independently moved and adjusted.

Detailed Description Text (8):

Further, it is shown in FIGS. 3 and 4 that the non-adjustable magnetic coils 4 and 7 are bolted to the bottom parts 16 through gusset plates 30 which engage the coils laterally.

Detailed Description Text (9):

FIG. 5 shows a cross sectional view through magnetic coil 5 of a further frame structure 40 about the magnetic system indicated in FIG. 1. The frame structure 40 is comparable to the frame structure 28 in that it is composed only of ferromagnetic shielding parts. Accordingly, frame structure 40 contains several elongate magnetic plate-shaped shielding elements 41 to 46 which longitudinally extend in the direction of the z-axis and are spaced at their adjacent longitudinal sides by small spaces 47. Thus the several shielding elements 41 to 46 form, for the most part a closed tubular shielding enclosure which is mechanically held together by means of ferromagnetic front plates which are not visible in the figure but may correspond, for example, to the end plates 21 and 22 according to FIG. 1. The individual magnetic coils can then be connected to the frame structure 40 through support elements 48 and 49 as well as holding and adjusting elements 50 to

Detailed Description Text (10):

According to the embodiment shown in FIG. 5 the magnetic shielding element frame structure 40 has approximately a hexagonically interior cross section for receiving the individual magnetic coils of the magnet system. It goes without saying that other polygons may be formed by a corresponding number of elongate magnetic plateshaped shielding elements without detracting from the invention.

Detailed Description Text (11):

According to the invention, a ferromagnetic return is co-integrated into a cagelike frame structure about a system of several ring-shaped magnetic coils. The mutually spaced ferromagnetic shielding elements which may have cross section dimensions other than those shown in the figures, represent the axial parts of the frame structure and are connected to each other by means of two ferromagnetic end plates on the end faces thereof. The frame structures of this invention are relatively easy to assemble in situ. Further, they ensure secure mounting of the individual ring-shaped magnetic coils while simultaneously allowing for fine adjustment.

CLAIMS:

1. In a frame structure with devices for supporting and for adjusting ring-shaped magnetic coils of a magnet system which are lined up one behind the other along a common axis, which magnet system generates a homogenous magnetic base field for an installation used in nuclear spin tomography, said frame structure including a plurality of frame parts extending parallel to the axis, the improvement

comprising:

- (a) said frame parts extending parallel to the axis being elongate magnetic shielding elements disposed on an imaginary cylindrical surface surrounding the magnet system and distributed regularly in the circumferential direction forming a cage-like structure;
- (b) said frame parts being mechanically connected with means for supporting and adjusting the ring-shaped magnetic coils of the magnet system within the frame structure;
- (c) at least one ring-like coil receiving element made of a non-ferromagnetic material rigidly connecting the individual magnetic coils to the elongate magnetic shielding elements extending parallel to the axis; and
- (d) a plate shaped magnetic shielding part with a central opening of predetermined radius at each of the end faces of said cage-like frame structure.
- 2. A frame structure according to claim 1 wherein said elongate magnetic shielding elements extending parallel to the axis in conjunction with said plate-shaped magnetic shielding parts at each of the end faces of said cage like structure alone form the frame structure.
- 5. A frame structure according to claim 1 wherein said elongate magnetic shielding elements are of a beam-shape.
- 6. A frame structure according to claim 1 wherein said elongate magnetic shielding elements are of a rod-shaped.
- 7. A frame structure according to claim 1 wherein said elongate magnetic shielding elements are of a plate-shape.

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L46: Entry 33 of 33 File: USPT Dec 24, 1985

DOCUMENT-IDENTIFIER: US 4560933 A

TITLE: Apparatus for adjustably mounting coils of a magnet system for nuclear spin

tomography

Brief Summary Text (5):

U.S. Pat. No. 4,315,216 discloses a magnet system for generating a base field, which system comprises four ring-shaped magnet coils which are aligned along a common horizontal axis. Since, as is well known, the homogeneity of the field of these coils must meet stringent requirements and should not vary, for instance, more than 0.01% of the magnetic field strength in the entire measuring volume, the positions and orientations of individual coils of the magnet system must be finely adjustable. Such adjustability is necessary even in cases of the highest manufacturing precision with respect to the magnet coils in order to compensate, for instance, the influence of iron parts in the vicinity of the magnet system. Each of the four magnet coils has maximally three degrees of freedom of translation and two degrees of freedom of rotation. Accordingly, a number of devices must be provided for mutually aligning the individual magnet coils. In this magnet system, all four adjustable magnet coils are supported on a common base plate. At one end face of each of the magnet coils are fastened four circumferentially equispaced plate-shaped elements which project radially outwardly. Corresponding plate-shaped elements of the four magnet coils are connected to each other via a common threaded rod. The axial positions and angular orientations of the individual coils within the frame structure are precisely determined by adjusting fastening nuts, by which plate-shaped elements of the coils are secured to the respective threaded rods. Furthermore, the individual magnet coils of the known magnet system can be aligned in the vertical direction via adjusting devices engaging the base plate (see FIGS. 4a and 4b of the above-identified patent). In this known magnet system, the expenditure for adjustment is relatively large since five adjusting devices are provided for each magnet coil. Furthermore, because the individual magnet coils are connected to each other via the threaded rods, thermal length changes and vibrations of these coils lead to a de-adjustment of the entire system and thus to a corresponding degradation of the homogeneity of the magnetic base field. Readjustment is relatively difficult in this case.

Brief Summary Text (11):

 (\underline{c}) that each support device contains a support element in the form of a spherical sector with a spherical surface rotatably inserted in a recess of the support device fixed with respect to the respective magnet coil and with a flat side slidably resting on horizontal support surface of the frame structure, and

Detailed Description Text (3):

The base field magnet array 2 comprises advantageously six annular magnet coils 6 to 11 which are aligned with each other along the z axis. Two of these magnet coils, preferably coils 7 and 10 which are adjacent to magnet coils 6 and 11 at the ends of array 2 are rigidly connected to a frame structure 45 which comprises two support bars 13 and 14 and a holding bar 15, as shown in FIG. 2. Support bars 13 and 14 rest on a substructure 17. Magnet coils 7 and 10 are held up via support devices 19 (not shown in detail) resting on the lower bars and are fixed to these

bars by metal sheets 20, so-called qusset plates. Gusset plates 20 engage magnet coils 7 and 10 laterally via tabs 21 and are bolted to support bars 13 and 14. Stationary magnet coils 7 and 10 are each rigidly connected to holding bar 15 via a claw-like fastening element 23. Support bars 13 and 14 as well as holding bar 15 thus form, together with the magnet coils 7 and 10, the rigid frame structure 45 in which the remaining magnet coils 6, 8, 9 and 11 are arranged adjustably by devices according to the present invention.

Detailed Description Text (5):

The support points A of the adjustable magnet coils 6, 8, 9 and 11 at support bars 13 and 14 as well as the tilting of these magnet coils with respect to the x-y plane due to mechanical couple K can be adjusted by setting or adjusting devices 27 and 28. Each positionable magnet coil 6, 8, 9 and 11 has two position setting devices 27 at support bars 13 and 14 and a third setting device 28 at holding or bracing bar 15. Setting devices 27 are juxtaposed to respective support devices 19 and are connected to a channel-shaped hollow profile body 29 which is open toward the bottom and which is fastened to the lower outside edge of the respective adjustable magnet coil, for instance, coil 11, in the vicinity of a support point. A support part or bracing projection 33 fastened to the support bar 13 (or 14) extends vertically into a space 32 within this hollow profiled body 29 between two free legs 30 and 31 thereof. The position of legs 30 and 31 of body or channel 29 and, therefore, of the magnet coil 11 relative to projection 33 is modifiable via an adjusting spindle 34 which extends substantially in the z direction and which is connected to outer leg 30, i.e., to the channel leg which is further away from the geometrical center M of magnet array 2, and is supported at one end by projection 33. Between this brace or projection 33 and the other free leg 31 of channel 29 a spring element 35 is clamped. This spring element 35 pushes the magnet coil, in the de-energized state of the magnet system, against adjusting spindle 34. Therefore, there is always a force-locking connection from each positionable magnet coil 6, 8, 9 and 11 via the two respective adjusting spindles 34 to the support bars 13 and 14.

<u>Detailed Description Text</u> (9):

FIG. 2 shows <u>qusset</u> plates 20 and fastening tabs 21 via which magnet coil 7 is rigidly connected to support bars 13 and 14. Magnet coil 7 is further fastened to holding bar 15 via claw-shaped fastening element 23. In the case of the adjustable magnet coils, the gusset plates and the fastening claws are eliminated, and fastening elements 23 are replaced by adjusting devices 28, by which the magnet coils can be tilted slightly.

Other Reference Publication (1):

Double, "Manual Field Adjustment for NMR Magnet", IBM Technical Disclosure Bulletin, vol. 20, No. 4, Sep. 1977.

Other Reference Publication (2):

P. C. Lauterbur, "Image Formation by Induced Local Interactions: Examples Employing Nuclear Magnetic Resonance", Nature, vol. 242, pp. 190-191, Mar. 6, 1973.

CLAIMS:

- 1. In a nuclear spin tomography system having n adjustably positionable magnet coils aligned with each other along a common axis for generating a homogeneous magnetic base field, the tomography system including a mounting apparatus with a frame structure and mechanical adjusting devices secured to stationary parts of the frame structure for adjusting the translational and angular positions of the magnet coils with respect to the frame structure, the improvement comprising:
- at least one additional magnet coil rigidly connected to the frame structure and aligned with the adjustably positionable magnet coils along the common axis, said adjustably positionable magnet coils each being connected to said frame structure

via three of the mechanical adjusting devices, said magnet coils forming an array having a geometrical center, each of said adjustably positionable magnet coils having a center of gravity defining a respective center of gravity plane oriented substantially parallel to the windings of the respective magnet coil and at least approximately perpendicularly to said common axis, and

support means included in the mounting apparatus for transmitting the weight of the n adjustably positionable magnet coils to said frame structure, said support means including at least n first support elements each rigidly attached to a respective adjustably positionable magnet coil and each being provided with a concave spherical surface defining a recess, said support means further including at least n second support elements each in the shape of a spherical sector having a planar surface slidably engaging a horizontal surface of said frame structure and a convex spherical surface slidably engaging the concave spherical surface of a respective first support element, the support elements associated with an adjustably positionable magnet coil defining at least one support point at which weight is transferred from the respective magnet coil to the frame structure, said support point being spaced from the center of gravity plane of the respective magnet coil on a side of such plane opposite said geometrical center, thereby giving rise to a mechanical couple operating on the respective magnet coil and tending to shift the top thereof towards said geometrical center.

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1. Document ID: US 20040100261 A1

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L63: Entry 1 of 12

File: PGPB

May 27, 2004

PGPUB-DOCUMENT-NUMBER: 20040100261

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040100261 A1

TITLE: Cold mass support structure and helium vessel of actively shielded high

field open MRI magnets

PUBLICATION-DATE: May 27, 2004

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47 Laskaris, Evangelos Schenectady NY US Clifton Park NY US Huang, Xianrui Burnt Hills NY US Ogle, Michele Dollar US Palmo, Michael A. Ballston Spa NY Thompson, Paul S. Stephentown NY US

US-CL-CURRENT: 324/318; 324/319, 335/216, 335/299

s KNOC Drawn De

2. Document ID: US 6828792 B1

L63: Entry 2 of 12

File: USPT

Dec 7, 2004

US-PAT-NO: 6828792

DOCUMENT-IDENTIFIER: US 6828792 B1

TITLE: MRI apparatus and method for imaging

DATE-ISSUED: December 7, 2004

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

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Record List Display Page 2 of 7

Giambalvo; Anthony J.

Kings Park

NY

US-CL-CURRENT: 324/318; 324/319

Full Title Citation Front Review Classification Date References Citation Claims KWC Draw De

3. Document ID: US 6617852 B1

L63: Entry 3 of 12

File: USPT

Sep 9, 2003

US-PAT-NO: 6617852

DOCUMENT-IDENTIFIER: US 6617852 B1

TITLE: MRI apparatus

DATE-ISSUED: September 9, 2003

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Danby; Gordon T. Wading River NY
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Damadian; Jevan East Northport NY
Damadian; Raymond V. Woodbury NY

US-CL-CURRENT: <u>324/318</u>; <u>324/322</u>

Full Title Citation Front Review Classification Date Reference Citation Claims KMC Craw Du

4. Document ID: US 6541973 B1

L63: Entry 4 of 12

File: USPT

Apr 1, 2003

US-PAT-NO: 6541973

DOCUMENT-IDENTIFIER: US 6541973 B1

TITLE: MRI apparatus

DATE-ISSUED: April 1, 2003

INVENTOR-INFORMATION:

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Danby; Gordon T. Wading River NY
Linardos; John Smithtown NY
Damadian; Jevan East Northport NY
Damadian; Raymond V. Woodbury NY

US-CL-CURRENT: 324/318; 324/322

Full Title Citation Front Review Classification Date Reference Claims WMC Draws Do

5. Document ID: US 6496007 B1

L63: Entry 5 of 12

File: USPT

Dec 17, 2002

US-PAT-NO: 6496007

DOCUMENT-IDENTIFIER: US 6496007 B1

** See image for <u>Certificate of Correction</u> **

TITLE: MRI apparatus

DATE-ISSUED: December 17, 2002

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Damadian; Jevan East Northport NY
Linardos; John Smithtown NY
Danby; Gordon T. Wading River NY
Damadian; Raymond V. Woodbury NY

US-CL-CURRENT: 324/318; 600/415

6. Document ID: US 6469508 B1

L63: Entry 6 of 12 File: USPT

Oct 22, 2002

US-PAT-NO: 6469508

DOCUMENT-IDENTIFIER: US 6469508 B1

TITLE: MRI apparatus

DATE-ISSUED: October 22, 2002

INVENTOR-INFORMATION:

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Damadian; Jevan East Northport NY
Linardos; John Smithtown NY
Danby; Gordon T. Wading River NY
Damadian; Raymond V. Woodbury NY

US-CL-CURRENT: 324/318; 324/322

Full Jitle Citation Front Review Classification Date Reference Claims KWC Draw Dr

7. Document ID: US 6445186 B1

L63: Entry 7 of 12 File: USPT Sep 3, 2002

Record List Display Page 4 of 7

US-PAT-NO: 6445186

DOCUMENT-IDENTIFIER: US 6445186 B1

TITLE: MRI apparatus

DATE-ISSUED: September 3, 2002

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Damadian; Jevan East Northport NY
Linardos; John Smithtown NY
Danby; Gordon T. Wading River NY
Damadian; Raymond V. Woodbury NY

US-CL-CURRENT: 324/319; 324/320

Full Title Citation Front Review Classification Date Reference Claims NMC Draws Do

8. Document ID: US 6437571 B1

L63: Entry 8 of 12 File: USPT Aug 20, 2002

US-PAT-NO: 6437571

DOCUMENT-IDENTIFIER: US 6437571 B1

TITLE: MRI apparatus

DATE-ISSUED: August 20, 2002

INVENTOR-INFORMATION:

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Danby; Gordon T. Wading River NY
Linardos; John Smithtown NY
Damadian; Jevan East Northport NY
Damadian; Raymond V. Woodbury NY

US-CL-CURRENT: 324/322; 324/318, 600/410

9. Document ID: US 6369571 B1

L63: Entry 9 of 12 File: USPT Apr 9, 2002

US-PAT-NO: 6369571

DOCUMENT-IDENTIFIER: US 6369571 B1

TITLE: MRI apparatus

DATE-ISSUED: April 9, 2002

Record List Display Page 5 of 7

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Damadian; Jevan East Northport NY
Linardos; John Smithtown NY
Danby; Gordon T. Wading River NY
Damadian; Raymond V. Woodbury NY

US-CL-CURRENT: 324/318; 324/319

Full Title Citation Front Review Classification Date Reference

10. Document ID: US 6335623 B1

L63: Entry 10 of 12 File: USPT Jan 1, 2002

US-PAT-NO: 6335623

DOCUMENT-IDENTIFIER: US 6335623 B1

** See image for Certificate of Correction **

TITLE: MRI apparatus

DATE-ISSUED: January 1, 2002

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Damadian; Jevan East Northport NY
Linardos; John Smithtown NY
Danby; Gordon T. Wading River NY
Damadian; Raymond V. Woodbury NY

US-CL-CURRENT: 324/320; 324/319

Full Title Citation Front Review Classification Date Reference Company Company Company December 1985

11. Document ID: US 6208145 B1

L63: Entry 11 of 12 File: USPT Mar 27, 2001

US-PAT-NO: 6208145

DOCUMENT-IDENTIFIER: US 6208145 B1

TITLE: MRI apparatus

DATE-ISSUED: March 27, 2001

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Danby; Gordon T. Wading River NY Linardos; John Smithtown NY Record List Display Page 6 of 7

Damadian; Jevan

East Northport

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US-CL-CURRENT: 324/319; 324/318

Full Title Citation Front Review Classification Date Reference

12. Document ID: US 6201394 B1

L63: Entry 12 of 12

File: USPT

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Mar 13, 2001

US-PAT-NO: 6201394

DOCUMENT-IDENTIFIER: US 6201394 B1

** See image for Certificate of Correction **

TITLE: MRI apparatus

DATE-ISSUED: March 13, 2001

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Wading River Danby; Gordon T. Linardos; John Smithtown

Damadian; Jevan East Northport NY

Damadian; Raymond V. Woodbury NY

US-CL-CURRENT: 324/319; 324/320

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1. Document ID: US 20040100261 A1

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L65: Entry 1 of 2

File: PGPB

May 27, 2004

PGPUB-DOCUMENT-NUMBER: 20040100261

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040100261 A1

TITLE: Cold mass support structure and helium vessel of actively shielded high

field open MRI magnets

PUBLICATION-DATE: May 27, 2004

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47 Schenectady NY US Laskaris, Evangelos NY US Huang, Xianrui Clifton Park Ogle, Michele Dollar Burnt Hills NY US Palmo, Michael A. Ballston Spa NY US Thompson, Paul S. Stephentown NY US

US-CL-CURRENT: 324/318; 324/319, 335/216, 335/299

Full Title Citation Front Review Classification Date Reference Sequences: Attachments Claims RMC Draw.De

2. Document ID: US 6201394 B1

L65: Entry 2 of 2

File: USPT

Mar 13, 2001

US-PAT-NO: 6201394

DOCUMENT-IDENTIFIER: US 6201394 B1

** See image for Certificate of Correction **

TITLE: MRI apparatus

DATE-ISSUED: March 13, 2001

INVENTOR-INFORMATION:

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Danby; Gordon T. Wading River NY Linardos; John Smithtown NY Damadian; Jevan

East Northport

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Woodbury

NY

US-CL-CURRENT: 324/319; 324/320

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